



# SYSTEMIC ROOT CAUSE ANALYSIS

## Background

In 2004, the Under Secretary of Defense for Acquisition, Technology and Logistics USD(AT&L) established a policy to revitalize systems engineering throughout the Department of Defense (DoD). The policy states that AT&L and other Office of the Secretary of Defense (OSD) staff members will conduct program support reviews (PSR) of programs for which the USD(AT&L) is the Milestone Decision Authority. These assessments will identify and help resolve issues and risks and ultimately improve the probability of program success.

## Systemic Analysis

Through these PSRs, the Systems and Software Engineering/Assessments and Support (SSE/AS) team has worked with hundreds of primarily ACAT ID programs and has gained insight and knowledge regarding program strengths and areas for improvement. SSE developed a systemic root cause analysis (SRCA) process that identifies root causes of recurring program issues and develops effective recommendations that go beyond treating symptoms. This analysis provides strategic acquisition support by revealing the broad trends that permeate the acquisition community. Although root cause analysis is not new, the SSE approach combines a detailed firsthand knowledge of program acquisition issues with a methodology that considers the perspective of the acquisition acquirer and supplier from senior leadership level to the program manager and engineer level. Driven by fact-based program information, the SRCA process supports the effort to improve policy, guidance, and training and to promote best practices within the Department.

In late 2006 SSE identified root cause terminology that could provide a structure in which to perform analysis. In 2007, SSE piloted the root cause structure on 44 acquisition programs and subsequently revised the structure based on program feedback and lessons learned during the pilot effort.

## Further Research and Analysis

SSE welcomes external ideas and suggestions. SSE/AS can provide assistance to members of the OSD acquisition team seeking to corroborate and collaborate on acquisition analysis topics using the SSE/AS data set. For further information, please contact the AS office at 703-602-0851, extension 117 or 119.

## Data

Program review findings resides in a secure Web-enabled relational database that allows for automated query and trend analysis based on the various data tagging and facilitates the effort of pulling the desired information from more than 3,700 findings across more than 50 program reviews. Automated analysis can include the following areas individually or in combination:

- ★ Program ACAT level
- ★ Service
- ★ Domain area
- ★ Life cycle phase of the program at time of the review
- ★ Finding type: Negative, positive, or neutral
- ★ Nature of the issue as related to the typology (e.g. risk management, earned value, supportability, etc.)
- ★ Root cause type

## Teamwork

SSE formed a partnership with government and industry to ensure stakeholder perspectives coverage. SSE conducted a series of SRCA workshops to focus on the systemic issues and to develop recommendations that address these acquisition challenges. The workshop series is focusing on a data sample that consists of approximately 1,500 negative findings from 44 program reviews.

## Emerging Results

Workshop participants generated approximately 90 acquisition-related recommendations. In December 2007, an OSD-approved, National Defense Industrial Association (NDIA)-chartered SRCA Task Group was formed under the Systems Engineering Division. The Task Group is developing the specific actions and implementation areas for the recommendations. Overall the leading recommendations relate to:

1. Better acquisition strategy planning
2. Enhancing and enforcing the decision review process
3. Enhancing staff capabilities: numbers of people and level of expertise

**More than 50% of the recommendations pertain to early planning, specifically program initiation and acquisition strategy development.**

The Task Group will complete the analysis, present results at the NDIA Systems Engineering Conference in October 2008 and publish a report in November 2008.

